TO: "Bill Schilit", INTERNET:schilit@google.com
CC: "Ted Nelson", INTERNET:tandm@xanadu.net
DATE: 1/24/2007 2:25 PM

RE: Handout for talk at Google (googSum-D10

googSum-D10
===07.01.24

Transclusion: Fixing Electronic Literature

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Everyone wants to improve on Web structure, but few see how stuck it is--the browser limits what can be seen, and the one-way embedded links limit connectivity. I still want to implement the original hypertext concept from the sixties and seventies. Politics and paradigms, not possibility, have held it back.

The main question I asked when I entered the computer field was: "How can we improve on paper?" To which my main answer was: "Keep every quotation connected to its original source context." (Meaningless in today's computer world.)

This has led to the generalized concept of transclusion, meaning "the same content knowably in more than one place." (Transclusion is often confused with transdelivery, getting parts elsewhere, which is a special case.)

Transclusion-based hypertext has great promise, fulfilling (I believe) all the things people want that the Web cannot do. Such a system can subsume, among other things:

- quotations
- anthologies
- collages
- remix
- content authentication
- DRM
- (Wikipedia structure)
- (Bush's "trails," which were not links but transclusions.)

But to build a clean system around transclusion, we do not embed, since that brings inappropriate markup and links to new contexts. We first collage clean content from whatever sources, then overlay that collage with links. (To stress that these are not like web links, we now say "flinks" for "floating links, " but I will not use that convention here.)

Most importantly, we must have editability with persistent addresses-- which means non-breaking stable addresses for every element. Each new version is distributed as pointers to stabilized content. We do our canonical editing and distribution via EDL (Edit Decision List, a Hollywood concept); thus content addresses never change, and links need not break.

In this model--

- Nothing is embedded, not even formats. Formatting becomes overlays.
- Links are applied (like postage stamps with strings between).
- Links become user-selectable.
- Transclusions are not tracked but discovered from the addresses.

Because transclusion is based on comparing addressses, the original 1960 spec is satisfied: every quotation is connected to its original context.

This is highly general, not just for text. It directly gives us a universal format for all media and their combinations, including multitrack texts, movies and audio.

However, I consider this structure to be in the literary tradition, because in the world of books--

- the author can say anything, but the reader can skip around (a "two-god system"); we extend these mutual prerogatives to other media
- quotation and its importance are deeply recognized, while not yet possible in other media
- books persist: though out of print; they live on in libraries and through family inheritance, while other media disappear; we want to extend long-term stability to all media

I believe that all the improvements anyone wants are embraced within this model--

- visibility of identical content between documents (transclusions)
- fine-grain editability without links breaking
- unbreaking links in any quantity
- links emplaceable and publishable by anyone, from anywhere
- links siftable and selectable-- users call a document with the links they want to see
- agile links enacting scribbles, sticky notes
- long-term links intended to last for centuries
- selectable views to the user's need, including of course the author's preferred view(s)

This also leads to a principled win-win copyright method where the quoted material is delivered (and if need be, sold) individually to each recipient, to fill holes in the EDL. This in turn means anyone can quote anything in any amount without negotiation, since the quoting party is just distributing an EDL. It also means the original content of every quotation stays always at hand. (Rightsholders will need to accept this deal; unfortunately explaining it is harder than implementing it :)

Naturally, Google can play a key part in all this. As transclusive formats start deploying (including browser-based transclusive formats), a Google listing of a document can point also to a document's content sources. (To say nothing of other possible roles for Google in transdelivery and brokering.)

People accuse me of wanting "perfection." No, I want the other 90% of hypertext that the Web in its present form cannot deliver.

I am showing prototypes of a client-based viewer and editor in 3D.

=30=

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https://archive.org/details/handoutfortalkat00tedn

From M.te Butler, 99.11.30
living in Mountain View CA.

Ted—

I am not sure you ever got a copy of this from me...

Happy belated American Thanksgiving 1999!

Michael Butler

contributing from the 4 appendix of the beast...

A PUZZLE
YOU'LL RECALL I TRAINED THOSE BUGS TO TUNE IN ON TELEPHONES?
YES, YES! A PATRIOTIC EFFORT! BRAVO!
WELL, I HAVE TRAINED ANOTHER GROUP.
A BABY SPIDER!
YES, TRAINED AS AN ASTERISK...
SEE, HE'S MOVING TO HIS RIGHT. HE'LL MOVE TO THE FOOTNOTE OF HIS MASTER'S CHOICE... SO I AM ALWAYS IN CHARGE OF THE MEANING.
YOU SEE, IF YOU CONTROL THE ASTERISKS IN A BOOK, YOU CONTROL ITS MEANING.
WHEN I COME ACROSS A MEANINGFUL FOOTNOTE, I PUT MY ASTERISKS TO WORK, THEY MAKE THE REFERENCE APPLY TO THE PART OF THE BOOK I LIKE.
SPIDERS HAVE EIGHT LEGS... YOUR ASTERISK HAS ONLY SIX.
YES, HE HAD TWO EXTRA...